

SOME AMERICAN REPRESENTATIVES OF  
ARENARIA VERNA.

M. L. FERNALD.

THE names *Arenaria verna* and *A. hirta* have long been familiar to American botanists, and they have been so long associated with certain alpine and high-northern plants that their American application is rarely questioned. A recent close examination of some plants of this perplexing group has convinced the writer, however, that in our interpretation of these names we have gradually wandered far from their true European significance.

In America the name *Arenaria verna* has been recently applied to high-northern caespitose and strictly glabrous plants, while most of the pubescent specimens have been assigned to var. *hirta*. All the plants thus treated have very small petals, usually shorter than the sepals or sometimes wanting. In Europe, however, the plant which is understood as *A. verna* is usually very glandular-pubescent and with very numerous comparatively showy flowers, the corolla equaling or exceeding the calyx. In these characters the true *A. verna* is obviously quite unlike the plants which ordinarily pass under that name in America; although a plant with characters as in typical *A. verna* of Europe has been found very locally at high altitudes in the Northwest, where many other European species unknown or essentially unknown in eastern America (*Phegopteris alpestris*, *Eriophorum opacum*, *Luzula glabrata*, *spadicea* and *arcuata*, *Ranunculus aquatilis*, etc.) are known to occur.

An attempt to clear the confusion surrounding the American plants which have recently been called *Arenaria verna* has led the writer to prepare the following synopsis. Two of the plants included are of closer affinity to other species than to *A. verna*, but since in America they have recently been confused with the latter species it is thought best to include them in the present notes.

\* Leaves linear-subulate, 3-ribbed: sepals with 3 essentially uniform parallel ribs: seeds reddish-brown, 0.4-0.6 mm. long.

ARENARIA VERNA L. Caespitose, glandular-pubescent: branches 0.4-1.5 dm. long: panicle many-flowered: calyx equalling or scarcely as long as the corolla, in fruit narrow-campanulate, 3-3.5 mm. long; sepals lanceolate to lance-ovate, acuminate, with narrow hyaline

margins: capsule distinctly exserted.—Mant. i. 72 (1767). *Alsine verna* Wahl. Fl. Lapp. 129 (1812); Gürke, Pl. Eur. ii. 255 (1899,) which see for detailed synonymy.—EUROPE and ASIA. Very rare in America, seen only from the Northwest. ALBERTA, Crow Nest Pass (*J. Macoun*, no. 18,273): BRITISH COLUMBIA, summit of Mt. Arrowsmith, Vancouver Island (*J. Macoun*): WASHINGTON, volcanic sand, altitude 2745 m., Mt. Rainier (*C. V. Piper*, no. 2115).

Var. **propinqua** (Richardson) comb. nov. Loosely or densely caespitose, *glandular-pubescent*, the filiform branches 2–15 cm. long, bearing usually 2 to 5 flowers: *fruiting calyx* 2.5–3.5 mm. long, the narrow-ovate hyaline-margined *sepals* short-acuminate, *usually exceeding the* oblong or narrowly obovate *petals*, and shorter than the capsule.—*A. propinqua* Richardson in Frankl. Jour. 738—reprint 10 (1823); Hook. Fl. Bor.-Am. i. 99 (1830) in part; Torr. & Gray, Fl. i. 181 (1838). *A. verna*, var. *hirta* Watson in King, Rep. 41 (1871); Porter and Coulter, Fl. Col. 14 (1874); Watson, Bibl. Index, 98 (1878) in part, and in Gray, Man. ed. 6, 86 (1890); Robinson in Gray, Syn. Fl. i. pt. 1, 246 (1897) in part. *A. verna* Britton & Brown, Ill. Fl. ii. 33, fig. 1504 (1897) in part. *A. verna*, var. *equicaulis* A. Nelson, Bull. Torr. Cl. xxvi. 352 (1899). *Alsine verna*,  $\eta$ . *hirta* Fenzl in Ledeb. Fl. Ross. i. 349 (1841) in part. *Alsine propinqua* Lange, Fl. Dan. xvii. 7, 8 (1877) as to Greenland plant. *Alsine verna*, var. *propinqua* Grönl. Isl. Fl. 33 (1881) as to name.—Arctic America, south to Quebec and northern Vermont, and on the higher mountains to Arizona and southern California. GREENLAND. The following specimens have been examined from eastern America. LABRADOR, near Hoffenthal (Kruth): QUEBEC, Mt. Albert, Gaspé Co. (*Allen. Collins & Fernald*); limestone detritus, Percé (*Collins, Fernald & Pease. Collins & Fernald*, no. 79. *Williams*): VERMONT, Smuggler's Notch (*Pringle et al.*).

Var. PROPINQUA, forma **epilis**, f. nov. Ubique glabra.

Like var. *propinqua* but *glabrous throughout*.—QUEBEC, limestone detritus, crest of Cap Barré, Percé, July 23, 1905 (*Collins & Fernald*, no. 80. *Williams*); crevices of serpentine, Ruisseau au Diable, Mt. Albert, August 12, 1905 (*Collins & Fernald*). Here belongs the glabrous Iceland plant illustrated in Flora Danica, xvii. t. 2903, as *Alsine propinqua*.

Var. HIRTA (Wormskj.) Watson. *Glandular-pubescent*: *branches 1–5-flowered*: *fruiting calyx* 4–5 mm. long, about equalling the capsule.—Watson in King, Rep. 41 (1871) in part, and Bibl. Index, 98 (1878) in part; Robinson in Gray, Syn. Fl. i. pt. 1, 246 (1897) in part. *A. hirta* Wormskj. in Fl. Dan. x. 6, t. 1646 (1819) excl. syn.; DC. Prodr. i. 405 (1824) excl. syn.; Cham. & Schl., Linnaea i. 56 (1826); Hook. Fl. Bor.-Am. i. 99 (1830); Torr. & Gray, Fl. i. 181 (1838). *Alsine rubella*, var. *hirta* Gürke, Pl. Eur. ii. 258 (1899), which see for further synonymy.—Arctic and subarctic EUROPE: GREENLAND: arctic

America, extending south very locally to high mountains of COLORADO, UTAH and ARIZONA.

Var. RUBELLA (Wahl.) Watson. Glabrous or slightly pubescent; the branches 1- (rarely 2-) flowered: calyx 3-4 mm. long, shorter than the capsule.—Bibl. Index, 99 (1878); Robinson in Gray, Syn. Fl. i. pt. 1, 246 (1897). *Alsine rubella* Wahl. Fl. Lapp. 128, t. 6 (1812); Gürke, Pl. Eur. ii. 258 (1899), which see for further synonymy.—Arctic and alpine EUROPE and ASIA: GREENLAND: arctic America, very locally south to the Rocky Mountains of BRITISH COLUMBIA.

\*\* Leaves triquetrous, one angle conspicuously stronger than the other two: sepals with one rib stronger than the others.

+ Fruiting calyx exceeding the capsule, the tips of the sepals spreading: seeds reddish-brown 0.4-0.5 mm. long.

A. ROSSII Richardson. Densely caespitose, glabrous, the very leafy branches 2-10 cm. long: leaves slightly fleshy, triquetrous (often appearing nerved), linear-subulate to linear-lanceolate, glabrous: peduncles 0.5-2 cm. long, 1- (very rarely 2-) flowered: calyx wide-spreading in anthesis, becoming short-campanulate in fruit, 3-4 mm. long; the lanceolate or lance-ovate slightly fleshy sepals subulate-tipped, usually exceeding the narrow-oblong petals, or the latter often wanting.—Richardson in Franklin, Jour. 738 — reprint 10 (1823); R. Br. in Parry, 1st Voyage, App. 272 (1823); Hook. Fl. Bor.-Am. i. 100 (1830); Torr. & Gray, Fl. i. 181 (1838); Porter & Coult. Fl. Col. 14 (1874); Robinson in Gray, Syn. Fl. i. pt. 1, 246 (1897). *A. elegans* Cham. & Schl., Linnaea, i. 56 (1826). *A. stricta* Watson, Bibl. Index, 98 (1878) in part, not Michx. nor *Alsine stricta* Wahl. *A. verna* Robinson in Gray, Syn. Fl. i. pt. 1, 245 (1897) in part, not L. *Alsine Rossii* Fenzl, Verbreit. Alsin. tab. ad 18 (1833) and in Ledeb. Fl. Ross. i. 356 (1841).—Arctic Northwest America and Northeast ASIA, south in the mountains to COLORADO and OREGON. Arctic specimens have the calyx crimson-tinged, while those from southward have greenish calyces but no other apparent differences.

+ + Fruiting calyx shorter than the capsule, the sepals with appressed-ascending tips: seeds black, 0.7-0.9 mm. long.

A. LITOREA sp. n. Laxe caespitosa; ramis rigidis glabris 0.2-1.7 dm. altis; foliis lanceolato-vel lineari-subulatis carinatis, inferioribus confertis fasciculatis, superioribus subdistantibus; panicula plerumque dichotoma pauciflora, pedicellis rigidis; calyce 3-4.5 mm. longa, sepalis anguste ovatis apice subulatis trinerviis glabris granuliferis marginibus late hyalinis; petalis anguste oblongis calyce brevioribus vel eo subaequantibus; capsulis ovoideis calyce longioribus.

Loosely caespitose, the wiry glabrous branches 0.2-1.7 dm. long, leafy only at the base: leaves lance- to linear-subulate, carinate, sub-

triquetrous, one nerve or angle more prominent than the other two, crowded at base, fasciculate, all but the uppermost exceeding the internodes: inflorescence 1-12-flowered, usually paniculate, the pedicels rigid and strongly ascending: calyx 3-4.5 mm. long; the narrow-ovate subulate-tipped sepals strongly 3-ribbed, glabrous, granular-roughened, with broad hyaline margins: petals narrowly oblong, shorter than or barely equalling the sepals: capsule ovoid, exserted. — QUEBEC, sandy and gravelly beach of the Baie des Chaleurs, Tracadigash Point, Carleton, July 22, 1904 (*Collins & Fernald*), July 19, 1905 (*Collins & Fernald*, no. 81. *Williams*): ONTARIO, shore of Lake Superior (*C. G. Loring*); Peninsula Harbor, Lake Superior, October 9, 1896 (*G. S. Miller, Jr.*). Nearest related to *A. stricta* Michx. which has the longer more bristle-like stiffer leaves extending in remote fascicles nearly or quite to the inflorescence, the petals twice as long as the sepals, which are themselves longer than the mature capsule. It is probable that Pursh's *A. juniperina* (not *A. juniperina* L.) from Newfoundland and Labrador is, judging from his description, similar to the plant of the Baie des Chaleurs.

GRAY HERBARIAM.

#### NOTES ON NEW ENGLAND HEPATICAE, — IV.

ALEXANDER W. EVANS.

DURING the past year very few additions have been made to the hepatic flora of New England by the exploration of new localities, and most of the additions which are noted below have come to light through the study of old material. Attention is also called to several species which should apparently be reduced to synonymy. With the exception of *Frullania eboracensis* all of the species mentioned are common to Europe.

1. LOPHOZIA EXCISA (Dicks.) Dumort. Recueil d'Obs. sur les Jung. 17. 1835. *Jungermannia excisa* Dicks. Pl. Crypt. Brit. 3: 11. 1793. *J. excisa*, var. *crispata* Hook. Brit. Jung. pl. 9. 1816. *J. capitata* Hook. l. c. pl. 80. *J. intermedia* Lindenb. Nova Acta Acad. Caes. Leop. Carol. 14, suppl.: 83. 1829. *J. intermedia*,  $\gamma$  *capitata* Nees, Naturgeschichte der europ. Leberm. 2: 125. 1836. *Lophozia capitata* Macoun, Cat. Can. Pl. 7: 18. 1902. Thorn Mt., Jackson,